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A
Medical Dissertation
on
Haemoptysis.

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Hæmoptysis.

An ejection of blood, from the mouth, attended by cough, subsequent to some affection of the breast, designates that species of Hæmorrhage denominated by Nosologists pulmonary Hæmoptysis. –

Hæmoptysis so termed from two greek words ΑΙΜΑ & ΠΤΥΩ ..... literally implying a spitting of blood, is located by the renowned Cullen in the class Pyrexiæ, and order Hæmorrhagiæ. –

By the same Author, five species of this disease are enumerated, First, Hæmoptysis plethorica when it neither arises from external violence, nor is preceded by cough or suppression of usual evacuations. – 2d Violenta, when proceeding from external violence. – 3d Phthisica, where emaciation and continued debility ensue. – 4th Calculosa, when with the blood, calcareous concretions are

thrown up - 5th Vicaria, when it originates from suppression of some accustomed evacuation. -

Hæmoptysis comes on, with a sense of weight and anxiety in the chest, some difficulty of respiration; a pain of the breast, a sensation of heat about the sternum, saltish taste, flushed countenance, irritation of the Larynx, which excites coughing and hawking, during which, a discharge of blood of a florid colour, mixed with a frothy fluid takes place - The irritation returning, successive discharges of blood are brought up in the same manner, with a noise in the wind pipe, resembling the sound of air passing through a fluid. -
The discharge of blood is sometimes small in quantity, and soon ceases, but in other cases it is in large quantities, and continues for several successive days - But, it is seldom so profuse as to prove Mortal, either by excess or sudden suffocation. - Though Hæmoptysis may occur at

any period of life, it is asserted by Cullen, and confirmed by subsequent experience, that it occurs most frequently between the ages of 15 and 35, from the plethoric state of the Lungs at that period.

Causes. The predisposing causes, are Sanguineous temperament, great sensibility and irritability, suppression of any usual evacuation, mal conformation of the chest, and previous affections of the Thorax. The Exciting causes are, a diminution of the weight of the atmosphere, violent exercise either of the body, or organs of respiration, exterminating purposes nal violence, and according to Dr. Cullen, excessive heat.

Dr. Cauldwell, the annotator to Cullens practice of Medicine, alledges that it is making mere inanimate machines of us to maintain that Heat relaxes, and Cold contracts the Lungs. But, if the Laws of inanimate matter, are applicable to any one part of the Animal economy, why not to the whole. That excessive heat, does by rarifying the

atmosphere, and consequently diminishing its gravity, or pressure on the body, relax (at least) the surface, is indisputable -

It is experimentally proved, that persons predisposed to Hæmoptysis, on ascending elevated mountains, become subjects of the disease. -

But Dr. Cauldwell admits, rarified air to be a cause of the disease - Now we do know, that a rarified state of the Atmosphere, is an effect of excessive heat, hence we conclude that heat, though not a direct, is an indirect cause of Hæmoptysis. -

Diagnosis - In Hæmoptysis, the blood is brought up, by hawking, and coughing of a florid colour, and mixed with a frothy mucus. The blood in Hæmatemesis, is emitted by vomiting is more copious, of a darker colour, more grumous, mixed with the contents of the stomach, and unattended by cough. -

Hæmoptysis, may in general, be readily distin:
:guished from all other diseases - But a discri:
:mination of the exact seat of the Hæmorrhage
is attended with much difficulty and uncer:
:tainty - The blood may issue from the Fauces
Trachea or Lungs. - When it flows from the
Fauces, it is brought up by hawking unaccom:
:panied by pain, cough, and oppression, and on
examination of the mouth, we are sometimes
able to perceive the source in the throat.
It is stated by Dr Good, in his study of medicine
that Hæmorrhage from the Lungs, is always
preceded by flushed cheeks, dyspnæa, and pain
in the chest, and the blood is brought up by
cough - Whereas Hæmorrhage from the Trachea,
it is preceded by no admonitory symptoms, and the
blood is brought up by hawking - We regret that
the Pathology of this disease, like that of many
others, is still enveloped in too great obscurity to
admit of that systematic, and efficient mode

of treatment which distinguishes the scientific Physi=
=cian from the empiric. –

Hæmoptysis was by the ancients, and still is by the moderns, too generally attributed to a rupture of some pulmonary vessel. – That Hæmorrhage, does take place from rupture of some pulmonary vessel is demonstrable, both by its consequences, and dissections. – A knowledge of the delicate structure, great vascularity, and incessant action of the Lungs, would involun=tarily lead us to expect some occasional derange=ment in that all important organ – But we are inclined to consider the rupture of the Pulmonary vessels to be of very rare occurrence and death, its almost uniform consequence. – This sentiment is corroborated by Dr. Lennic, who, in speaking of the rupture of these vessels, asserts that there occur only two varieties of ruptured pul=monary vessels, one proceeding from a bursting of Aneurism into the Bronchia, and the other from

Tubercular excavation, both of which are attended by almost immediate death.

Dr. Abercrombie in his admirable Essay on Haemoptysis, observes, that the breach of continuity which has taken place, is equivalent to a wound, it may either heal, or advance to suppuration — A desire to steer safely between the two great quicksands, Scepticism, and Credulity, induces us, with the profoundest respect to the invaluable acquirements, and experience of Dr. Abercrombie, to inquire by what possible means can an union of the ruptured parts be effected.

A retention of the ruptured parts in actual contact is, indispensably necessary to effect their union; but of the practicability of this, we entertain our doubts, for, though the contractions of the Lungs, may bring the ruptured parts into contact, their dilatation will immediately displace them, and thus their union be impeded.

But it may be replied, that Nature adopts the

same curative process in Hæmorrhages from the Lungs, as in Hæmorrhages of other parts of the system, that the blood becomes the bond of union and cements the ruptured parts. But from the great muscularity of the heart, which im=pels the circulating fluid to the remotest parts of the system, from the proximity of the Lungs to the heart, and from the smallness of their vessels, we infer, that the blood circulates through the pulmonary vessels, with an equal, if not, greater force and velocity, than it does in those of any other part of the frame. Be this admit=ted, then each subsequent column of blood passing through the ruptured vessel with great velocity and force, will displace the portion of blood deposited by its preceding, and the blood thus not having time to coagulate, previous to its removal from the orifice, will prove inade=quate to their union. The blood thus effused into the chest, by irritating the Lungs, induces

inflamanation, which in a healthy Lung, terminates in suppuration, but in a diseased Lung, in ulceration, and finally in Phthisis Pulmo:-nalis.-

Dr. Laennic, in heading of Hæmoptysis, observes, whatever may be the severity of this disease, resolution seems to take place, with great facility, since we find a great many cures of Hæmoptysis.-

I have not had (continues he) opportunities of tracing the progress of this resolution by morbid dissections, but I think it must be complete, since I have never been able to trace the least vestige of induration in subjects, who had been affected with severe Hæmorrhage for a period of years, before their death.- The very circumstance of the researches of Dr. Laennic, and other indefatigable Anatomists, in quest of vestiges of resolution in the pulmonary vessels, having proved abortive, combined with other

considerations, induces us to attribute that species of Hæmoptysis of so common occurrence to some morbid state, not of the Lungs, but of the Trachea or Bronchia.—

The liability of these parts to Hæmorrhage, is (we presume) beyond the possibility of a doubt. Dissections prove that the lining membrane of the Trachea, and its appendices is susceptible of inflammation, thickening, and ulceration, and its vessels, liable to turgidity and Hæmorrhage.— It is obvious, that blood effused from the Tracheal or Bronchial vessels, must necessarily gravitate towards the Lungs, and on coming in contact with that organ, must excite coughing, hence it is, that we are induced to consider the common opinion of Medical Men, that blood brought up by coughing, is a characteristic symptom of rupture of pulmonary vessels, as not altogether correct, since coughing may be excited as just explained.— Cullen, Thomas

Good, Lennic, and every author, whose works we have had an opportunity of consulting on this disease, have particularized, not only coughing, but also the red colour of the blood, and the froth (with which it is mixed) as infallable symptoms of Hæmorrhage from the Lungs — Our want of coincidence with the above cited Authors, you will ascribe (we hope) to a desire, not of dissenting for the sake of eccentricity, but of contributing our mite to the advancement of that most humane and philanthropic of all sciences, which has for its noble object, the alleviation of the Malad=dies peculiar to the Human race. —

Whether the blood derives its red colour from a portion of Iron contained in that fluid, or from an animal substace of a peculiar na=ture, susceptible (like the colouring matter from vegetables) of uniting with bases, Chymists have not yet agreed — But this is certain,

that the blood on its return to the right Auricle is of a purple colour, but on leaving the left Ventricle, is of a bright red or Vermilion colour. The oxygen inhaled during respiration, being absorbed through the coats of the Vessels combining with the Carbon, disengages it in the form of Carbonic Acid gas, and probably by thus decarbonizing the blood, restores it to its original red colour — Do the pulmonary Vessels perform any other office than that of conveying their contents? If not; is it not possible that blood flowing from the Trachea, and conducted by the Bronchia to the Lungs, may there attain that degree of temperature necessary for the combination of Oxygen with Carbon, and thus be restored to its red colour, hence it is that we consider the red colour of blood, by no means a correct indication of the seat of the Hæmorrhage, and the froth with which the blood is mixed is, we think nothing more than a mixture of the

mucus, secreted by the Trachea or Bronchia with the air. — Dr. Lennic ascribes Hæm:-optysis of the most violent and dangerous kind, that which resists all treatment, to an indura:-tion of some parts of the Lungs, which he says consists in an effusion of blood into the paren:-chyma, or air cells of the Lungs. — Whether this effusion be the effect of rupture of a pulmo:-nary or Tracheal vessel, he does not say; but from his observation, that only two varieties of ruptured pulmonary vessels occur, both of which are attended by almost immediate death; he must have alluded to a rupture of the Tracheal vessels, whence the blood emanating may be conducted by the Bronchia (which we know communicates with the air cells) into the air cells, and there forms the indurations of which he speaks. —

Treatment - In order to treat any species of Haemorrhage rationally, and successfully, it is necessary first to ascertain the kind of Haemorrhage, and then to adapt the mode of treatment to the nature of the case - Thus Haemoptysis of an active (or to use the modern and more appropriate terms) of a tonic or pyrexia kind, will suggest to the reflecting practitioner, a depleting and sedative mode of treatment - Whereas Haemoptysis, of a passive, atonic, or apyrexial kind, would suggest the propriety of a tonic and astringent mode of treatment. —

We shall now proceed to consider the plan of treatment adapted to Active, Tonic, or Pyrexial Haemoptysis, which may be known by the Haemorrhage, attended by a hard quick pulse, short and dry cough, difficult respiration, and a sensation of oppression, and pain in the Chest - The primary indication here, is the reduction of

Vascular action, and the most direct means of effec-
-ting this, is Venesection, which by diverting the blood
from the ruptured vessel, and its neighbouring
parts, and relieving the respiratory apparatus
of its undue proportion of blood (nam ubi irrita-
-tio ibi fluxus) ..... whence proceed
the oppression and difficulty of respiration, must
have a direct tendency to arrest the Hæmorrhage.
It is impossible to specify what quantity of blood
should be at once abstracted, for the quantity
must be varied according to the state of the pulse,
constitution, and other circumstances connected
with the case — The efficacy of copious depletion
by the Lancet, so as at once to quell the vascu-
-lar excitement, is attested by the experience of the
most eminent Physicians, ~~at the~~ among whom
the distinguished Professor of the practice of
Medicine in the Philadelphia Institution, deser-
-vedly ranks very high — Some Astringent should
be next exhibited, which by its cooperation with

Venesection, may check the hemorrhage —
Of the Astringents, the Acetas Plumbi, is most generally selected for this disease. — It is usually given in the dose of. grs. i-iij in combination with Opium —
Dr. Chapman in his treatise on this article; intimates that the usual dose of grs. i-iij. is too small to restrain copious Hemorrhages, he mentions an instance of his having given, ʒj. which proved ineffectual, and innocent to the patient, and relates a case of an old woman, having taken by mistake ℥i. without experiencing any other inconvenience, than its purgative effect. —
He further observes, that the administration of this Medicine should be preceded by Venesection, otherwise it will prove not only unavailing, but pernicious to the system. —
Specac. administered in nauseating doses, either alone, or combined with sugar of Lead and Opium, seems to be admirably adapted to this species of

Hæmorrhage - The Muriate of Soda, or common culinary salt, is highly recommended by the illustrious Dr. Rush in this disease; its modus Operandi, does not seem to be understood, though its efficacy is generally attributed to its astringent property - It is given in substance, in the dose of a tea, or tablespoonfull every fifteen or twenty minutes. -
The Vitriolic Solution, composed of white Vitriol - Rock Alum, and Cochineal, was much recommended by Dr. Mosely, and others but it is not much used, on account of the great difficulty of its retention, by irritable or delicate stomachs. - Alum, was formerly used in this disease, but Dr. Cullen, deemed it inappropriate to this species of Hemorrhage and in this opinion, he is supported by Dr. Chapman. - The Elixir of Vitriol, was Dr. Sydenhams favorite remedy in Hæmoptysis, and of its efficacy little doubt is

entertained. From its tonic property, it is probably better suited to passive than active Hemorrhage, the common dose is from 15 to 20. drops, every two or three hours. The propriety of Vomiction in this disease, remains as yet unsettled.

Dr. Brian Robinson, the most zealous advocate of this practice, attributed the efficacy of Emetics, to a constriction of the capillary, or extreme vessels, which he supposes to be produced by the Emetic operation.

But it is a fact, the truth of which is attested by the experience of every practitioner of the least observation, that Vomiting produces a general excitement of the system, and determines to the surface, whereas Nausea, alone is attended by a great depression of the Vascular System, and a cool, and general collapse on the surface.

Now, if Dr. Robinson, is correct in ascribing the advantage derived from Emetic Articles

to a constriction of the capillary vessels, we entertain little doubt of the superior efficacy of Nausea, over Vomition in this disease —
The common practice of administering Ipecac in small and repeated doses of one, or two grains, to excite and keep up Nausea for some hours, seems a much more safe and effectual treatment. — The very singular operation of the Digitalis, or Foxglove, in retarding the frequency of the pulse; suggested its use in Active Haemorrhage, and it has been attended with considerable success. It is considered by some, a precarious Medicine, in small doses, not acting promptly enough, but in large doses most violently even exciting vomiting —

Experiments prove that its first effect is that of a direct Stimulant, increasing the velocity, and consequently the number of pulsations, succeeded by its sedative effect

the reduction of vascular action, hence to guard against any deleterious effects from its stimulant property, Venesection should be premised —
Nitras Potassæ, or Nitre, by diminishing vascular action, has proved of great utility in active Hæmorrhage — It is given alone, or in combination with Tartar Emetic —
A saturated solution of it, in ardent spirits is spoken of by Dr. Chapman, as a popular remedy in this disease, it is given in the dose of a tablespoonfull at short intervals to suppress the flow of blood — The Mineral Acids, have also been prescribed in this disease —
The Sulphuric is generally preferred, given in doses of ten or fifteen drops, every second or third hour, it is most generally prescribed in the form of Elixir Vitriol. —

The subsequent interrogation is put to the Medical world by Dr. Darwin, will not

Immersion of the whole body, into cold water, arrest the Hæmorrhage? —
With all due respect to this man of inestimable worth, we assume the liberty of responding in the negative —
Immersion in Cold water, we deem a hazardous remedy in this disease, and should be resorted to only in desperate cases — In Hæmoptysis, there is generally an engorgement of the Lungs, and adjacent parts — But it is the opinion of Physicians of the greatest experience in the use of the Cold Bath, (if I mistake not) that cold water especially in the form of Immersion, possesses in addition to its stimulating effect, the property of determining the blood internally to the Viscera, and consequently must tend to the aggravation of the disease, hence it is, we feel disposed to dissent from Dr. DARWIN, supposing him to advocate the affirmative of his question. — Blisters, are said to be of great

utility in this affection, but there exists among Physicians, great discrepancy of opinion, rela:
=tive to their proper situation —
Dr. Chapman, and others maintaining the principle, that their efficacy is proportioned to their proximity to the affected part, recom
=mend their application to the chest —
It is with respect for the talents, and invala
=ble experience of Dr. Chapman, and those concurring with him, that we express our sentiment —
The circumstance of Blisters, acting on the principle of Revellents, induces us to think that, as in Apoplexy, their application to the head proves injurious, so in Hæmoptysis, their application to the Chest, will aggravate the disease, for in both diseases, our object is to divert the blood from the Head, and Chest, the seat of the respective diseases —
But Blisters acting by Revulsion, attract the

blood, from the general System towards their seat, hence we think they prove more efficient, applied to the extremities, than to the chest. —

Were we in quest of Medicines, adapted to the reduction of Vascular action, we should select the Hydragogue Purgatives. —

Though aware of the principle laid down by Medi=cal Men, that the System can bear but little purging in most affections of the Chest, yet we cannot refrain from thinking, that the Saline Purgatives, are adapted to the early stage of Active Hæmoptysis, and in this opinion, we have the concurrence of Drs Cullen and Thomas —

Of the advantage of purgatives in that species of Hæmoptysis, occasioned by suppression of the Menses, in consequence of Constipa=tion, we are almost convinced, though desti=tute of experimental knowledge — We meet with frequent cases recorded in the Medical

annals, of the successful employment of purgatives in Epistaxis. —

But why purgatives, are so sparingly, and even so seldom employed in Haemoptysis, it is difficult to conjecture; unless it be attributable to a blind superstitious adherence to the principle above mentioned. Viz, that most affections of the breast, are aggravated by full purging.

There are other circumstances worthy of our attention —

The Patient should adhere strictly to the Antiphlogistic Regimen, avoiding all vigorous exertions of the body, and agitations of the Mind — but some kinds of gestation, such as sailing, travelling in an easy Carriage on good roads, or riding gently on Horseback, have proved beneficial —

But if the Haemorrhage be copious, the patient should lie with perfect tranquility in bed, with his shoulders elevated — He should be

kept taciturn, as the flow of blood, may be reinduced by loquacity –
His Diet, should be very low, consisting of acidulated drinks, and milk, his Bowels should be kept soluble, and his Chamber cool and well Ventilated –
Cold Applications, should be made to the Chest, Axillæ, or Armpits, and particularly to the Scrotum, or Genitals –
Cold Applications to the last mentioned parts, are highly recommended in both Epistaxis, and this disease. –

Passive Hæmoptysis

We shall conclude, with a few reflections on the Treatment of Passive, Atonic or Asyngenial Hæmoptysis
This species of Hæmoptysis always connected with more, or less debility, may occur as

a primary disease, or as a consequence of Active Hæmoptysis — The debility attending this Hæmorrhage, will of itself suggest to the practitioner the primary indications, the invigoration of the general System and the restoration of the Vascular System, to its Natural Tone —

The Tonics are best suited to the fulfilment of these indications —

The Peruvian Bark, stands preeminent above its associates in the Treatment of Passive Hæmorrhage, and is recommended by the famous Dr. Rush, as an Article of the most decided advantage in this disease — It is usually given alone, in substance. —

Dr. Chapman, recommends the exhibition of the Bark in combination with the Chalybeates, by which (he thinks) its efficacy is enhanced the correctness of which we cannot question — The Mineral Acids

are highly spoken of, in this disease, and are better suited to Passive, than Active Hæ=
=morrhage, the preference is almost invaria=
=bly given to the Sulphuric —
The Vegetable Astringents, Kino, and Catechu have been used in this disease, but with so little benefit, that they are no longer prescribed —
In obstinate cases of Hæmoptysis, we should resort to the Herculean Remedy, MERCURY, has been advantageously used, as an alterative, in those cases which were supposed to have originated from Bilious accumulations, or infractions of the Liver; an instance of this disease, yielding to a spontaneous salivation, is mentioned by Mr. Bang. Dr. Parr also relates a case which, after resisting every treatment, was removed by Mercury —
Would not the Nitrous Powders, prove

beneficial in intractable cases of Haemop-
-tysis —
The Patient should take moderate exercise,
his Diet should be Nourishing, and his Drink
should be Malt Liquors, particularly Porter.
This Treatment failing, as a Dernier resort,
the patient should remove to a warmer
Climate, or take a Sea Voyage — Cures have
sometimes been thus effected, after the fai-
-lure of every other plan of Treatment. —

In the conclusion of this Essay, candour urges its
Author to a frank confession of his obligations
to several Medical Authors, but more especial-
-ly to your preeminently Illustrious Professor
of the practice of Medicine —
Some plea may possibly be expected of its
Composer, for its great imperfection, but
aware of its many faults, he diffidently
submits it to the inspection of the learned

Faculty, flattering himself with the hope that the circumstance of its being the produc=
=tion of a youthful, and undisciplined, mind, may suffice to atone for the gros=
=ness, and multiplicity of its defects.-

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In

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By

Anne Mitchell Pratt